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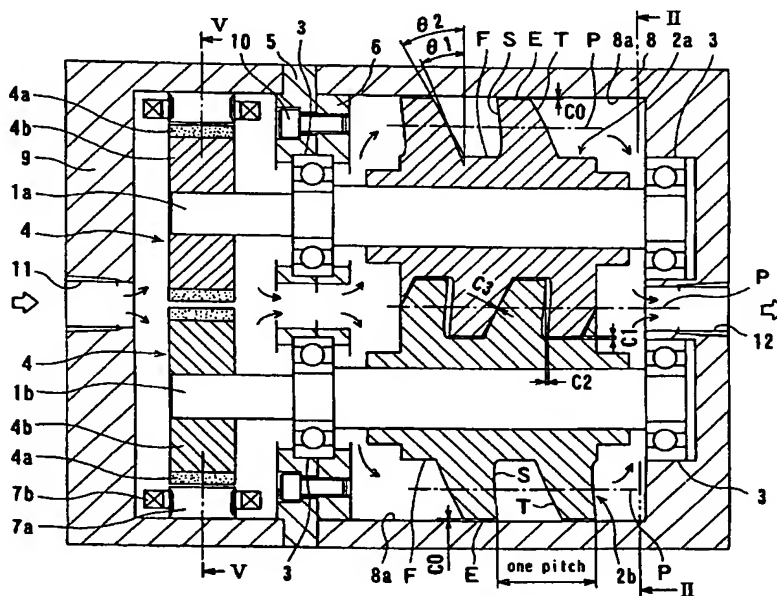
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(54) Title: SCREW PUMP AND METHOD OF OPERATING THE SAME



(57) Abstract: A screw pump includes a pair of screw rotors (2a, 2b) having teeth which are held in mesh with each other for drawing and discharging a fluid by rotating the screw rotors (2a, 2b) synchronously in opposite directions. The teeth of the screw rotors (2a, 2b) have the same shape as each other and are coiled helically in opposite directions. The teeth of the screw rotors (2a, 2b) have an axial tooth profile which allows a pair of facing teeth surfaces T of the screw rotors (2a, 2b) to be brought into contact with each other only at a pitch line P when the pair of facing teeth surfaces T are brought into contact with each other.



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# INTERNATIONAL SEARCH REPORT

International application No.

**PCT/JP03/ 12652**

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> F04C 18/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> F04C 18/16, 18/18  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Japanese Utility Model Gazette 1976-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2004, Japanese Registered Utility Model Gazette 1994-2004, Japanese Gazette Containing the Utility Model 1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5697772 A (Ebara Corporation) 1997.12.16, Whole document, Fig. 1 - Fig. 24 & EP 736667 A & TW 331581 A & JP 8-277790 A	1 - 8
Y	GB 419338 A (BRITISH THOMSON-HOUSTON COMPANY, LIMITED) 1934.11.09, p. 3, left column, 1. 1 - 43, Fig. 5 - Fig. 6a (Family: none)	1 - 8
Y	US 2511878 A (Roots-Connersville Blower Corporation) 1950.06.20, column 4, 1. 47 - column 5, 1. 4, Fig.2 (Family: none)	1 - 8
Y A	US 5814913 A (Ebara Corporation) 1998.09.29 Whole Document, Fig. 1 - Fig. 22 & EP 678966 A & JP 8-149766 A & JP 8-254193 A & DE 69503301 C	5 - 7 1 - 4, 8

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 2000-50615 A (San-eikasei Kabusikigaisha) 2000.02.18 Whole document, Fig.4 (Family: none)	7 1 - 6, 8
A	GB 112104 A (EDWARD NUEBLING) 1917.12.27, p. 4, l. 54 - p. 5, l. 3 (Family: none)	1 - 8
A	JP 8-189485 A (Kabushikigaisha Ebara Seisakusho) 1996.07.23, Whole Document, Fig. 1 - Fig. 21 (Family: none)	1 - 8
A	JP 2001-37175 A (Kabushikigaisha Ebara Seisakusho) 2001.02.09, Whole Document, Fig. 1 - Fig. 11 (family: none)	1 - 8